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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,387	07/16/2002	Simone Mazzoni	00MO03054271	5129

27975 7590 01/22/2007

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EXAMINER	
BOLOURCHI, NADER	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/088,387	MAZZONI ET AL.	
	Examiner	Art Unit	
	Nader Bolourchi	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,5,13,20 and 21* is/are rejected.

7)☒ Claim(s) *6-10,14-19 and 22-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/18/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/2007 has been entered.

2. Applicant's amendment to claims is entered.

3. Claims stand rejected under 35 USC § 103.

Response to Arguments

4. Applicant's arguments filed 1/12/2007 have been fully considered but they are not persuasive.

In respond to the Applicant's arguments cited in pages 9-13, that (dotted line emphasis is added by Examiner)

> The independent claims have been amended to more clearly define the present invention over the cited prior art references. In particular, independent claims 4, 13 and 20 have been amended to better highlight that the memory is a shared memory between the interleaver and the deinterleaver. Support in the specification may be found on page 12, lines 7-10 and in FIG. 6, for example.
>
> In view of the claim amendments and the arguments presented in detail below, it is submitted that all of the claims are patentable.

Examiner Respectfully disagrees. One ordinary skill in the art recognizes that using a single memory to be shared in place of separate RAMs is a common practice. Therefore, amending claims to indicate that memory are shared does not make the claims patentable over prior art.

The Applicant also argues that (emphasis is added by Examiner):

> Referring now to the claim recitation of the shared memory having a minimum size based upon a maximum bit rate of the group of predetermined bit rates, and the recitation that the size of each of the first and second memory spaces being set as a function of the bit rate actually processed by the device, the Applicants submit that the Examiner mischaracterizes the teachings of the Berlekamp et al. patent.
>
> More particularly, the Berlekamp et al. patent fails to teach or suggest that a size of the interleaving and deinterleaving RAMs is set as a function of the bit rate actually processed by the device. The Berlekamp et al. patent provides no indication whatsoever as to the size or apportionment of the either the interleaver or deinterleaver RAMs.

Examiner respectfully disagrees. When data rate is high, the size of the interleaving and deinterleaving memory must increase in order to accommodate interleaving and deinterleaving function; as Djokovic et al. do suggest the use of RAM device in high bit rate application like DMT (col. 2: lines 50-52) to accommodate any data rate accordingly. This teaching implicitly suggests the size of RAM device is function of bit rate. Therefore, claim 4 stand rejected

Applicant further argues that (emphasis is added by Examiner):

> Moreover, the fact that data rates for reading/writing for the interleaver and deinterleaver are the same does not mean that their sizes are set as a function of the bit rate actually processed by the device. To hold otherwise would require the impermissible use of the claimed invention in hindsight as a template or roadmap to piece together the teachings of the prior art.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Examiner notes that Applicant is silent about the ground of rejection of claims 5, and 21 and provides no argument in response.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4, 13, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Djokovic et al. (US 6,956,872) in view of Berlekamp et al. (US 4,559,625).

Regarding claim 4, Djokovic et al. disclose channel coding (Fig. 1: 100) and decoding (Fig. 2: 200) stage comprising an interleaver (Fig. 1: 114; 146), a deinterleaver (Fig. 2: 242) , and memory (col. 2: lines 50-52) having a minimum size based upon a maximum bit rate of the group of predetermined bit (col. 2; lines 22-24). They do not disclose a first memory space assigned to interleaver and second memory space assigned said deinterleaver , each being a function of the bit rate.

Berlekamp et al. disclose an interleaving system that requires only one RAM for the interleaver and one additional RAM for the deinterleaver (col. 8: lines 47-50; Fig. 5; col. 6: line 47 – col.7: line 8) each being a function of the bit rate (col. 4: lines 47-49). However Examiner notes that using a single memory to be shared in place of separate RAMs is a common practice. Therefore, It would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teaching of Djokovic et al. and Berlekamp et al. for the purpose of minimizing the effect upon an error correction decoder of the phase or time-of-occurrence of the noise burst as suggested by Berlekamp et al. (col. 2: lines 25-28).

Regarding claim 5, Djokovic et al. disclose as stated in rejection of claim 4 above. Furthermore they disclose a Reed-Solomon coder (Fig. 1: 112) and Reed-Solomon decoder (Fig. 2: 244) connected to said interleaver and said deinterleaver and having a length N (col. 2: lines 20-21).

Regarding claims 13 and 20, Djokovic et al. disclose as stated in rejection of claims 4 and 5 above. Furthermore they disclose a random access memory (col. 2: line 50-52) whose minimum size is fixed function of a maximum bit rate the group of predetermined bits (col. 2: lines 22-24).

Regarding claims 21, Djokovic et al. disclose as stated in rejection of claims 20, and furthermore as stated in rejection of claim 5 above.

Allowable Subject Matter

6. Claims 6-10, 14-19, and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nader Bolourchi whose telephone number is (571) 272-8064. The examiner can normally be reached on M-F 8:30 to 4:30.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Nader Bolourchi
1/16/2007
Art Unit 2611

JEAN B. CORRIELUS
PRIMARY EXAMINER
1-18-07